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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,750	09/29/2003	Timothy J. Dupuis	SIL.P0066	1480
30163	7590	09/21/2005	EXAMINER	
JOHNSON & ASSOCIATES PO BOX 90698 AUSTIN, TX 78709-0698			SHINGLETON, MICHAEL B	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/673,750

Applicant(s)

DUPUIS, TIMOTHY J.

Examiner

Michael B. Shingleton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-8, 10-14, 16, 17 and 25-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8, 13, 14, 16, 17, 25-28, 32, 33 is/are rejected.
- 7) ☒ Claim(s) 2-7, 10-12 and 29-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The affidavit filed on 6-29-2005 under 37 CFR 1.131 has been considered and is effective to overcome the Denning et al. reference.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8, 14, 16, 17 and 25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kashima 6,069,528 (Kashima).

Figure 1 of Kashima discloses a circuit and method for “protecting” devices in an RF power amplifier and a method of controlling an RF power amplifier. This circuit/method includes providing a peak detector, elements 3 and 4 that are connected to a RF power amplifier 1. This peak detector clearly detects a peak voltage at a first node of the power amplifier, i.e. the output of the power amplifier. This circuit/method disclosed by Kashima also includes providing for power control circuitry 7. This control circuitry 7 is coupled to the peak detector and the power amplifier as is clearly illustrated by Figure 1 of Kashima. This power control circuitry also controls the gain of the power amplifier (See column 3, lines 37-63). This control circuitry does this by determining whether the detected peak voltage is higher than a threshold voltage provided by elements 8 and 9. If this detected voltage is higher than the threshold voltage then the gain of the power amplifier is decreased. This limits the power output of the amplifier. If this detected voltage is lower than the threshold voltage then the gain of the power amplifier 1 is increased. Again see column 3, lines 37-63. The coupler 2 “detects” the output power of the RF power amplifier 1 as read in light of the specification. Note the sentence bridging pages 6 and 7 of the specification. Here applicant states: “[a] power detector, such as (a) directional coupler 112, is used to detect the output power.” Also this directional coupler 2 of Kashima is clearly illustrated in Figure 1 of Kashima as being coupled to the output of the power amplifier and the control circuitry 7.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 26-28, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima 6,069,528 (Kashima) in view of French 5,510,753 (French).

Figure 1 of Kashima discloses a circuit and method for “protecting” devices in an RF power amplifier and a method of controlling an RF power amplifier. This circuit/method includes providing a peak detector, elements 3 and 4 that are connected to a RF power amplifier 1. This peak detector clearly detects a peak voltage at a first node of the power amplifier, i.e. the output of the power amplifier. This circuit/method disclosed by Kashima also includes providing for power control circuitry 7. This control circuitry 7 is coupled to the peak detector and the power amplifier as is clearly illustrated by Figure 1 of Kashima. This power control circuitry also controls the gain of the power amplifier (See column 3, lines 37-63). This control circuitry does this by determining whether the detected peak voltage is higher than a threshold voltage provided by elements 8 and 9. If this detected voltage is higher than the threshold voltage then the gain of the power amplifier is decreased. This limits the power output of the amplifier. If this detected voltage is lower than the threshold voltage then the gain of the power amplifier 1 is increased. Again see column 3, lines 37-63. The coupler 2 “detects” the output power of the RF power amplifier 1 as read in light of the specification. Note the sentence bridging pages 6 and 7 of the specification. Here applicant states: “[a] power detector, such as (a) directional coupler 112, is used to detect the output power.” Also this directional coupler 2 of Kashima is clearly illustrated in Figure 1 of Kashima as being coupled to the output of the power amplifier and the control circuitry 7. Kashima is silent on the use of a transistor i.e. switching device for the power amplifier. It is well-known to employ a transistor for a power amplifier. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a transistor in the power amplifier of Kashima because, as the Kashima reference is silent on the exact power amplifier circuit one of ordinary skill in the

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art would have been motivated to use any art-recognized equivalent power amplifier circuit including the conventional power amplifier that utilizes a power amplifier.

An alternative to sensing the peak voltage at the output of the power amplifier is to sense it at the input of the amplifier. French shows this in Figures 3 and 4. Note element 108. This allows for a fast response especially in certain fault conditions like a short (See column 10 around line 37). Furthermore, clearly the output of the power amplifier is proportional to the input and thus the peak detector at the input is in effect sensing the power at the output of the power amplifier.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect the power of the amplifier at the output of the power amplifier via a peak detector at the input of the power amplifier given the art recognized equivalence of these two peak detector circuits as taught by French. One of ordinary skill in the art would have been additionally motivated to make the combination because the sensing of the input of the power amplifier is at a lower level than directly at the output. Note that the coupler or power detector formed on the input side of the power amplifier of the combination made obvious above is "coupled" to the output of the power amplifier via the power amplifier itself.

Claims 2-7, 10-12, 18, 19 and 29-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note that this is dependent upon the double patenting rejection being overcome.

Applicant's arguments filed 6-29-2005 have been fully considered but they are not persuasive.

Applicant states that applicant believes that Kashima does not teach or suggest a method of protecting devices by detecting a peak voltage at a first node, detecting the output power of the power amplifier, and decreasing the gain of the power amplifier in response to the detection of a peak voltage, even if the detected output power is less than a desired output power level. The examiner respectfully disagrees. As noted in the previous office action, coupler 2 "detects" the output power of the power amplifier 1 as read in light of the specification. Pages 6 and 7 provides for the directional coupler as one means that forms a power detector. Thus the coupler of Kashima clearly detects power and meets this claim language. The gain is controlled by the variable attenuation unit 10 and as noted in the previous office action that as the peak power increases the gain is reduced. No to the newly added limitations, one limitation "detecting the output power of the power amplifier" was answered above. The fact that the coupler 2 is connected to the output of the power amplifier provides for the detection of the output power of the power amplifier, especially in light of applicant's own specification. The other newly added limitation to at least claim 14 is "even if the detected output power is less than a desired output power level". This is a very broad limitation for "a desired output power level" means any amount. It is like a "predetermined" amount. In other words the "desired" output power level could be a very high average power level which the device of Kashima will always be under, but yet there would be peak power levels that would occur and accordingly the gain of the power amplifier would be decreased.

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The newly added limitations to independent claim 25 are also anticipated by Kashima contrary to applicant's beliefs. Applicant adds "a power detector coupled to the output of the RF power amplifier for detecting the output power of the RF power amplifier". Applicant is referred to the reasoning above rather than repeat the same reasoning here. Applicant also adds to independent claim 25 "power control circuitry coupled to the power detector and to the peak detector for controlling the output power of the power amplifier, wherein the power control circuitry protects devices in the RF power amplifier by decreasing the gain of the power amplifier when the peak detector detects a voltage above a voltage threshold at the one or more critical nodes in the RF power amplifier." As indicated in the previous office action, element 7 forms part of the power control circuitry. This power control circuitry is clearly coupled to the power detector 2 and the peak detector 3 and 4. Applicant in fact on page 9 of the remarks states that "the purpose of Kashima is to control the output power". Also as addressed above when the peak value of the power rises above a certain point the gain of the power amplifier is reduced thereby providing a protecting function. Applicant should also note that with respect to claim 16 the same argument of "a desired power level" clearly applies. The desired power level can be any amount. Note that the limitations of claim 17 is an alternative limitation and the second part of the alternative limitation is clearly present in Kashima as indicated above.

Independent claim 32 adds "a power detector coupled to the output of the RF power amplifier for detecting the output power of the RF power amplifier". The term "coupled" is a very broad term in that the rejection of claim 32 involving Kashima and French even with the coupler formed on the input side of the power amplifier, this coupler or power detector is "coupled" to the output of the RF power amplifier via the RF power amplifier itself.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

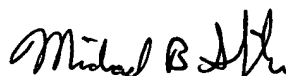
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 and after July 15, 2005 the fax number will be 571-273-8300. Note that old fax number (703-872-9306) will be service until September 15, 2005.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS

August 25, 2005



Michael B Shingleton  
Primary Examiner  
Group Art Unit 2817